REMARKS/ARGUMENTS

Amendments

The Applicants have amended claims 1, 16 and 30. Claims 1-43 are pending in the application. The amendments were made to distinguish the term partial correlation. Favorable reconsideration of the application is respectfully requested in view of the foregoing amendments and the following remarks.

Claim Rejections – 35 U.S.C. § 103 (a)

Claims 1-43 are rejected under 35 U.S.C § 103(a) as being unpatentable over Harrison in view of Grace and further in view of Laakso. The Applicant respectfully traverses the rejection of these claims.

The Harrison reference appears to disclose a method and apparatus for collecting and using statistics of a communications system to measure the system's performance. Harrison analyzes collected statistics (data associated with a particular parameter such as call set-up (page 6, lines16-20)) with reference to a threshold that varies with sample size to solve the problem of changing sample sizes and fixed thresholds. Basically Harrison sets more than one threshold according to the collected sample size. If the sample size is large, the threshold is low (e.g., 10%) and if the sample size is small, the threshold is high (e.g., 50%). The system varies a threshold value according to the data samples in the measurement so as to increase accuracy of the analysis. (Page 7, line 14 - page 8 line 3)

Grace appears to disclose a system and method that correlates current alarm and problem events to historical data. The correlation is sought since "events" that

occur in a system either periodically and at the same time or very close in time, may be related. The operator of the network may use the correlation to devise appropriate time windows to look for these occurrences and identify relationships. This allows for more timely system and equipment management. (page 4, lines 6-20).

In one arrangement the relatedness of a selected event with two or more other events is measured, and the two or more other events are ranked in order of said statistical probabilities.

The present invention discloses a method and system for determining influence between parameters (page 9- page 10, paragraph 0017) in a communications network. The basic premise is to obtain a set of measurements of two or more parameters. The samples associated with the parameters are measured to determine whether the correlation is significant. In the case of three or more parameters, each parameter is compared with each of the other parameters so as to obtain a "partial correlation" between each of the parameters. The partial correlation is defined as a correlation between each pair of parameters of the group of two or more parameters. (Page 6, paragraph 0010). An example might be if there are parameters A, B and C, a partial correlation would be a correlation between A and B or B and C or C and A.

Independent claim 1 has been amended to more clearly and distinctly claim the invention to which the Applicant is entitled. The Applicant respectfully directs the Examiner's attention to amended claim 1.

> 1. (Currently Amended) A method for determining whether two or more parameters influence one another within a communications network, comprising the steps of:
>
> obtaining a set of measurements for two or more parameters within the communications network;
>
> determining a correlation between each of the two or more parameters;
>
> <u>determining a partial correlation between each *pair* of the two or more parameters if at least three parameter measurements are made;</u>
>
> determining whether the correlations and the partial correlations are statistically significant; and
>
> <u>determining whether the two or more parameters, if any, influence one another based on the statistically significant correlations and partial correlations.</u> (emphasis added)

The Applicant respectfully asserts that neither Harrison nor Grace or Laakso teach or suggest all the emphasized limitations in claim 1 above.

In contrast to Harrison, which compares statistics to a varying threshold value, the present invention compares and correlates parameters to each other. As stated above, a set of data measurements is obtained for each of two or more parameters and a correlation is taken. If at least three parameter measurements are taken, then a partial correlation between each pair of parameters is also taken. A determination is made whether there is a statistical significance and whether the two or more parameters influence each other (Page 6, para. 0010).

The Applicant has reviewed the Grace reference which is cited against the third limitation of claim 1, that of "determining a partial correlation between each of the two or more parameters." The definition of a partial correlation is found on page 6 paragraph 10 of the application, "...a partial correlation between each pair of the parameters are then determined." Grace does not define, or even mention partial correlation as defined by the Applicant. The cited portion of Grace (page 3, lines 32-page 4, line20) sets out the likely relationships between events that occur in an equipment management system. Grace also discloses that historical data can improve accuracy as the database increases in size. Effectively, this portion of Grace is describing how the invention increases accuracy as the amount of data increases. There appears to be no mention of a partial correlation between each pair of two or more parameters as disclosed by the Applicants' invention

Grace is cited against the claim 1 limitation of "determining whether the correlations and partial correlations are significant." The Applicant has reviewed the reference and determined that the cited portion ranks the "relatedness" of a selected event with two or more other events. However, the measure of relatedness is the statistical probability of further events having occurred within the same temporal window by chance (Page 4, lines 31-33). In other words, the events of interest are restricted to occurring in a specific temporal window. "Relatedness" is not the same as the Applicant's partial correlation. The Applicant respectfully submits that the cited portion is not the same as the subject limitation.

The Grace reference is cited against the element of claim 1, "determining whether the two or more parameters influence each other based on the statistically significant correlations and partial correlations." The cited portion of Grace deals with the low probability of two events occurring simultaneously (i.e., in a specific time window) and not being related. In sum, the simultaneous occurrence of two seemingly unconnected events is statistically significant and Grace's invention relies on this fact (Page 7, lines 8-11). As noted above, the Applicants' inventive element determines the significance of the correlations and partial correlations, not specific time windows. The Grace reference relies on a simultaneous occurrence to connect two events and does not determine the correlation between two parameters or partial correlation between three parameters.

The Laakso reference is cited for increasing reliability if more than two measurements are made. However, Laakso does not provide the limitation of partial correlation that is missing from both Harrison and Grace.

Therefore, the Applicant respectfully submit that the Harrison, Grace and Laakso references do not teach or suggest the emphasized elements of claim 1 either individually or in combination. The Applicant respectfully requests withdrawal of the rejection of claim 1.

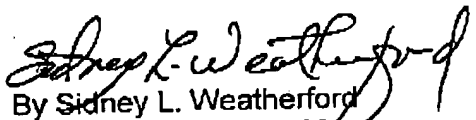
As between claim 1 and the Harrison, Grace and Laakso references, the Applicant submits that independent claims 16 and 30 contain limitations analogous to those found in claim 1. Also, the respective dependent claims of claims 1, 16 and 30 contain the same novel limitations. This being the case, the Applicant respectfully requests the withdrawal of the rejection of claims 1-43.

CONCLUSION

In view of the foregoing remarks, the Applicants believe all of the claims currently pending in the Application to be in a condition for allowance. The Applicant, therefore, respectfully requests that the Examiner withdraw all rejections and issue a Notice of Allowance for claims 1-43.

The Applicants request a telephonic interview if the Examiner has any questions or requires any additional information that would further or expedite the prosecution of the Application.

Respectfully submitted,



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